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SERVICE PAPER

A PLAN OF TEACHING AIDS

in

THE WESTFIELD PUBLIC SCHOOLS

Submitted by

Raymond Wyman

(B.S., Massachusetts State College, 1937)

In partial fulfillment of requirements
for the degree of Master of Education

1947

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THEATRICAL NOTES

NOTES FROM THE JOURNAL

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In 1939, Springfield High School teaching aids equipment was moved from the former library classroom building. Individual teachers used the equipment in their classrooms as well as they could with help from one of the science teachers who had become interested in teaching aids. This was to be given only before school and break periods. It was found that most high school students generally were not willing to spend any extra time equipment. The walls were therefore soon covered from every side with classroom letters in painted colored chalk. The windows were large and had to be closed with dark curtains that were somewhat, unfortunately, too inefficient in keeping the room. The electric outlets were few in number, badly located, and on -fused lines. Books often had to be moved into a special position, so books in the room were not adequate for a busy school program. Most teachers were not particularly set and were unwilling to spend the time in preparing to teach without equipment. This influenced them in the use of equipment which

PREFACE

At the beginning of the 1937-38 school year there were no modern teaching aids in use in the Westfield schools with the exception of a few silent films and filmstrips used by the High School Agriculture Department. In the spring of 1946 the Westfield School Committee created the full time position of Teaching Aids Supervisor to make audio and visual teaching aids available to all public school pupils, elementary as well as secondary. The transition from a curriculum without teaching aids to one with the wide use of such aids was gradually developed on the high school level and finally expanded to include some work in the elementary schools.

In 1939, Westfield High School teaching aids equipment was moved throughout the thirty classroom building. Individual teachers used the equipment in their classrooms as well as they could with help from one of the science teachers who had become interested in teaching aids. The help could be given only before school and between periods. It was soon evident that classrooms generally were not suited to sound and projection equipment. The walls were hard and sound bounced from everything causing distortion before it reached student ears. The windows were large and had to be fitted with dark curtains that were expensive, unreliable, and inefficient in darkening the room. The electric outlets were few in number, badly located, and on overloaded lines. Desks often had to be moved into a special position. No table in the room was adequate for a heavy sound projector. Most teachers were not mechanically apt and were unwilling to spend the time in preparation to avoid mechanical failures. This discouraged them in the use of teaching aids.

The result was that, after a few trials, teaching aids were used only in a few rooms by a few teachers.

By 1944 the value of teaching aids as used by these few teachers was evident enough for the High School Administration to allot half of the writer's day to the direction of teaching aids in the High School.

When a survey of the classrooms and the teaching aids equipment was completed, it was decided that a concentration of equipment in one room that could be permanently arranged was better than the continuous transportation of equipment throughout the school.

A large room, originally built for a shop, was set aside for teaching aids. A partition was built across one end which divided it into an office and an audience room.

This combination room is now the teaching aids center.

The office contains desks, work benches, dark room, and projectors permanently set up behind ports which open into the audience room. The mechanical part of the teaching aids program goes on here, staffed mainly by students. Senior business girls do the typing and bookkeeping. Boys work on equipment, project films, or study. Without these students giving their study hall time, much less would be accomplished. One sound projector, one filmstrip projector, one transcription player, and one radio are constantly ready for use without special setting up. A spare of each is available for emergency use, or for moving to other schools, classrooms, and the auditorium.

The audience room seats a hundred pupils which means that two or three class groups can meet at once if desired. The windows are painted

black so that the room is darkened simply by dimming the lights. Heavy cloth draperies hung on the wall improve the acoustics. Having the noisy projector behind a partially soundproof partition eliminates much mechanical disturbance. An eight by ten foot beaded screen is also permanent equipment.

This system where the pupils instead of the equipment are moved has proved so effective and efficient that many teachers now make regular use of teaching aids. Often there are ten class groups a day that use a film as part of their regular class work. Any teacher can have what she wants without being concerned with any mechanics of operation. She arranges for what she wants in advance, prepares her class, walks down with them to the teaching aids room at the scheduled time, uses the teaching aid, and returns to the classroom. As many as three different classes can make use of the same equipment during one sixty minute period. The saving of time and equipment is very important.

The same group of boys and girls operate all assembly programs which regularly have public address, lantern slides for songs, and often a sound film.

In September 1946, the Supervisor of Teaching Aids for all the public schools started his work outside the High School. The expanded program to be set up posed a problem now in the process of solution.

To solve the problem it was necessary to study the elementary schools and personnel, find the best or ideal method to use from reading what recognized authorities have written, and then determine if the ideal method, as described in Chapter III of this paper, was immediately usable in Westfield. The study indicated that a method at variance to

the ideal was required in the beginning or very few pupils in the elementary schools would have an opportunity to profit from teaching aids.

The interim method described herein may prove usable in many small cities, towns, and school unions that want to make a start with teaching aids even though hampered by lack of funds and trained personnel.

"Teaching Aids" is used in this paper because it is the most inclusive term to designate the many devices that can be used in the modern school to give a greater degree of reality than is possible with books, blackboards, and the other traditional teaching materials. Supervisors in other cities often use other titles.

Visual Aids is probably the most common term, but it limits the field to projection and advantage should be taken of other available aids. An early text in the field is titled, "Visualizing the Curriculum."^{1/}

Audio-Visual Aids as a designation seems to be gaining in favor with some workers. One of the latest texts is called, "Audio-Visual Methods in Teaching."^{2/}

1/ Charles F. Hoban, Charles F. Hoban, Jr., Samuel B. Zisman, Visualizing the Curriculum. The Cordon Company, New York, 1937.

2/ Edgar Dale, Audio-Visual Methods in Teaching. The Dryden Press, New York, 1946.

CHAPTER I

INTRODUCTION

Use of Teaching Aids in the Elementary School

Motion pictures were originally produced for the entertainment of adults in commercial theaters. Gradually motion pictures to educate as well as entertain were produced for theater use. Some teachers and administrators saw in these films a medium that could be used in the schools to help teach better many of the things they were already trying to teach.

Since the first films were made for adults, they were better suited to older children in the high schools and colleges and were of doubtful value to young children in the elementary schools.

About fifteen years ago, films were first produced particularly for the education of pupils in their schools. Each year the use of school films is increasing because more teachers and school administrators are finding that pupils learn more through the use of films. The growth of other teaching aids such as filmstrips, slides, radio, and recordings has also been expanding rapidly. Teaching aids in the classroom a decade ago were a novelty, today they are readily accepted if they are made available by the school authorities. "Scarcely any phase of the school program can claim more widespread interest and attention than are now directed toward audio-visual procedures in education."¹

^{1/} Audio-Visual Education in City-School Systems. National Education Association Research Bulletin, Volume XXIV, Number 4. Washington, D. C., December, 1946. p.133.

Today some elementary schools are making more use of teaching aids than the high schools. "In the two groups of largest cities (30,000-100,000 and over 100,000 in population) and in all cities having special audio-visual departments, the weight of opinion is that elementary teachers are making more extensive use of audio-visual materials than are teachers in the junior or senior high schools."1/

Increase in Number of Teaching Aids Supervisors

When teaching aids were used only by a few high school teachers in their own classes they were directed by the regular school administrators and helped out of difficulties by their own ingenuity.

As the use of teaching aids spread throughout the high school a teacher was necessary for part time help in managing the materials and techniques. Teaching aids are fundamentally mechanical, and many teachers are not mechanically inclined. They will use the aids if there is help nearby. Unfortunately many cities, particularly the smaller ones, have never progressed beyond this stage.

When teaching aids are used in all the city schools then more progress has been made. "A practical question which is faced, sooner or later, in any city that makes extensive use of audio-visual materials is whether or not to establish an audio-visual center, with a specially trained director, and perhaps certain staff assistants, to supervise and coordinate the audio-visual program."2/

1/ Ibid., p. 146.

2/ Ibid., p. 136.

Westfield is following the trend toward special supervision of teaching aids in all the schools. The bulletin quoted above points out that, "....more than three-fourths of the cities over 100,000 in population have created special agencies of some type to take general oversight of audio-visual instruction." "More than a third of the cities 30,000 to 100,000 also have special audio-visual centers."^{1/}

The Massachusetts Teaching Aids Society was once a group only of teachers interested in teaching aids. It is gradually becoming a group of supervisors.

Responsibilities of a Supervisor of Teaching Aids

The standard reference "Motion Pictures in Education" ^{2/} was consulted to find what teaching aids supervisors should be responsible for. From part I thirty-five different (though sometimes overlapping) jobs were listed that teaching aids supervisors were assuming. From these there seemed to be five major areas in which to work. They are administration, education, clerical work, mechanical work and advancement of art.

Administration obviously deals with the leadership necessary to get the work defined, assigned, and done. The supervisor must:

1. Make up, obtain, and spend a budget.
2. Select and obtain materials and services.
3. Organize and classify materials so that they can be readily used.

^{1/} Loc. cit.

^{2/} Edgar Dale, Fannie W. Dunn, Charles F. Hoban, Jr., and Etta Schneider, Motion Pictures in Education. H. W. Wilson Company, New York, 1938.

4. Keep an inventory of what he is responsible for.
5. Keep in touch with the teachers working under him and react to special abilities.
6. Prepare rules and regulations necessary for proper use of materials.
7. Report to his superiors at regular intervals.
8. Evaluate new materials and services.

Supervisors have the responsibility of educating the teachers under them and the superiors over them. This education takes the following forms:

1. Pointing out that teaching aids are applicable to practically all fields.
2. Providing for the in-service training of teachers.
3. Assisting in organizing courses of study.
4. Lending expert advice to teachers and principals on matters where teaching aids are concerned.
5. Preparation of bulletins and circulars on techniques, methods and materials.
6. Testing devices and techniques to evaluate materials and methods.
7. Demonstrating new apparatus and materials.
8. Relating teaching aids to the course of study.

The mechanical work of the teaching aids supervisor is such that a bent for electrical and photographic gadgets is practically a necessity unless the department is large enough to have a mechanical specialist or small enough to depend on outsiders to do the work. The supervisor is responsible for:

1. A production plant for visual aids.
2. A photographic darkroom.
3. Servicing and upkeep of equipment.
4. Installation of equipment.
5. Providing films, equipment and facilities.
6. Transporting or supervising the transportation of equipment and materials.
7. Repairing equipment.

To the supervisor of teaching aids belongs the task of furthering a part of education that gets the verbal support of many but that is

not sufficient to make the procedure as good
and robust as it can be and not fully depend on such
as statistical inference or some other form of model
inference not necessarily based on the same principles
as the inference used in the original paper. In this case
the inference is based on the principle of maximum likelihood

which makes the estimator unbiased and consistent.

It is also shown that the estimator is consistent and has a normal
distribution as the sample size increases.

oldenbach et al. claim that their estimator is
consistent and has a normal distribution as the sample size increases.
However, they do not provide any proof or justification
for this claim. They only state that the estimator is consistent
and has a normal distribution as the sample size increases.
Therefore, it is not clear whether their estimator is consistent
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neglected by the great majority of the country's teachers. In particular he can do the following things:

1. Collect good teaching aids.
2. Encourage experiments on the value of teaching aids.
3. Organize field study and excursions.
4. Keep in touch with sources of new teaching aids.
5. Promote more efficient use of materials that are available.
6. Develop an appreciation of teaching aids.
7. Obtain good publicity.

In Philadelphia the visual education coordinator has his duties defined as follows:^{1/}

1. To advise all teachers on available films, slides, and recordings, and effective methods of their use.
2. To maintain and make available to teachers all available catalogues and other informational materials on available audio-visual materials.
3. To provide for the care, storage, cleaning, and oiling of projection equipment.
4. To schedule projection equipment, visual education rooms, and films and slides for use by various teachers.
5. To train projectionists.
6. To organize and supervise a projection club.
7. To coordinate the use of audio-visual aids throughout the building.
8. To arrange for ordering, delivery, and return of audio-visual aids from the division of visual education.

According to Dale^{2/} the duties of the director of visual education of the Los Angeles City Schools are as follows:

1. General organization and administration of the section.
2. Supervision of personnel.
3. General direction of (a) production, (b) instruction, and (c) distribution.

^{1/} Charles F. Hoban, Jr., Movies That Teach. The Dryden Press, New York, 1946, pp. 148-149.

^{2/} Edgar Dale, Audio-Visual Methods in Teaching. The Dryden Press, New York, 1946. pp. 485-486.

4. Budget making.
5. Making of tabular studies in growth of the service: analysis of needs.
6. Making of periodic reports to superior officers.
7. Preparation of manuals, bulletins, catalogues, and lesson units on the techniques and uses of audio-visual materials.
8. Organization of audio-visual education conferences with directors of instruction, supervisors, principals, and teacher committees.
9. Preparation of rules and regulations governing distribution.
10. Determination of the objective requirements of the course of study.
11. Coordination of audio-visual materials in the course of study.
12. School visitations to determine needs.
13. Search for sources: examination, evaluation, and acquisition of audio-visual materials.
14. Teacher-training in the use of equipment and types of audio-visual materials.
15. School and teacher demonstrations in the use of equipment and types of audio-visual materials.
16. Conducting experiments in the application and intensive uses of audio-visual materials.
17. Organization of special exhibits.
18. Correlation of community sources of audio-visual materials: museums, art galleries, industrial, and commercial plants.
19. Public relations: community addresses, reports on contributions of audio-visual materials to the enriched curriculum, special exhibits.

Survey of Westfield Schools

Westfield has one High School, one Boy's Trade School, one Intermediate School, and six Elementary schools. This does not count the parochial schools. The 6-2-4 plan is used. One of the elementary schools is operated by the local State Teachers College.

The High School was built in 1930 to accommodate twelve hundred pupils in the usual academic courses. It has had up to 1250 pupils but now has about 800. About half the supervisor's day is spent here, mostly in the teaching aids room and office, but sometimes in other rooms or the auditorium. The school was unfortunately built just before teaching aids were considered important by school planners. It is difficult to get power in classrooms, the walls are hard acoustically, and it is difficult to get proper window shading. For these reasons most teaching aids are used in a special room.

The Boy's Trade School was completed in 1932 for 160 students. They do a little teaching aids work with their own equipment.

The Intermediate School is fifty years old and was once the high school. Due to classroom difficulties with teaching aids work is progressing on a special projection room similar to the one in the High School only on a less elaborate scale.

The Teachers College Training School is operated by the local State Teachers College. It is a school in which young men and women observe and practice the best methods in teaching. Unfortunately the practice teachers get no course in teaching aids and little opportunity to observe them in use or practice with them. All supervision in the

training school is done by the college staff.

The Franklin Street School is the oldest school and the last of the four room schools in operation. The year it was built is missing from school records. The four teachers have the first four grades. The rooms are very large and have high ceilings. Acoustically it is the best in the city. A bulb must be unscrewed to be used as an outlet for electricity for the use of a projector. Since the rooms are so large it is possible to assemble all the school in one room for a short time.

The Moseley School was built in 1915 and added to in 1922. It now has 14 rooms and an auditorium. Teaching aids work is done in the auditorium which is large enough to seat 350 students. From a teaching aids standpoint the ceiling is too low and covered with sheet metal. It is hard to distribute clear sound.

The Fort Meadow School was constructed in 1916 and has 16 rooms and an assembly hall. The hall is in the middle of the one story building but is higher than the rest with windows all around the top. The walls are wood paneled. This assembly hall is the most difficult for both sight and sound but the special class is working on some ideas to improve it. A transformer must be carried to this school since without it the projector has less than 90 volts available. It is interesting to note that a special fireproof booth was installed in a little room on the roof behind the hall. It can be reached only by a ladder and has never been used for anything.

The Prospect Hill School was built in 1896 and an assembly hall

was added later. It has 11 rooms. The assembly hall is adequate for teaching aids but needs some better curtains to get the room dark.

Abner Gibbs School was completed in 1914 and has 14 rooms. There is no assembly hall and the classrooms are only large enough for a maximum of two classes. One room has been adapted for teaching aids with movable chairs and projection conveniences.

The Ashley School was built in 1898. It has eight very large rooms with high ceilings. One room is fixed up as an assembly room that can be darkened and half the school can come together at once. Less than 90 volts are available here unless all the lights in the building are turned off. Usually the special transformer mentioned above is used. This school is the only one in Westfield with a central Sound System of which they make considerable use.

A summary of the Westfield Public School Buildings follows on a separate sheet.

WESTFIELD PUBLIC SCHOOL BUILDINGS

Name	Classrooms	Sittings	Built	Teachers
Abner Gibbs	14	358	1914	10
Ashley	8	300	1898	7
Fort Meadow	16	558	1916	8
Franklin	4	159		4
Moseley	14	349	1915 & 1922	8
Prospect Hill	11	369	1896	8
Training		364	1899	13
Trade		160	1932	11
Intermediate	23	546	1898	11
High	31	1200	1930	37
Totals		4363		117

Survey of Westfield Teachers

The city of Westfield has 117 public school teachers working in the ten buildings. All but three high school teachers have at least one degree, but, in the other schools, a two or three year normal school diploma is the common thing. Of course new teachers without experience are expected to have a degree, but a majority of the teachers are older women. Westfield seems to have had a small turnover of teachers even during the last few years. There are no men teachers in the elementary schools with the exception of one in the Training School.

To date our school department has not required that teachers take any extension or college courses to hold their positions or receive increments. However, there is a difference in the salary maximums for teachers with no degree, bachelor's degree and advanced degrees.

In the school department a record is kept of the advance educational work of all teachers. Each card was consulted to determine how many elementary teachers had taken any course in Visual Aids, Teaching Aids, or Audio-Visual Aids. It was found that only one teacher had taken such a course. The majority of teachers had taken no advance work for credit since leaving school.

It is obvious from this survey that there are teachers as well as pupils to educate. Almost none of the teachers in the elementary schools have had any professional acquaintance with teaching aids. It is part of the supervisor's duty to see that they get some without delay, or that he do most of the work which should be done by teachers.

Westfield schools now have four supervisors; one for Music, Art, Physical Education, and Teaching Aids.

The addition of these new supervisory positions will greatly increase the teaching aids service in all the public schools of Westfield. This will result in the greatest amount of education that can be performed and facilities that are available.

The public want the services already existing for the library, town hall, fire department, and school will not add any demands on the institution in Westfield personnel and facilities. Considering the small and irregular size of teaching aids in our public schools, the state and county, it might just plain wise selecting additional aids teachers were required. The new Student Personnel Association definitely already makes points which would prove the educational committee has taken into good care of present programs.

The trustees also in methods of ways to the community that the public school are now taught the teaching aids hopefully without making the lesson difficult and students perform.

Conclusion of the article

There are many ways of being successful when it comes to supervising. The most often the way of failure has not yet been discovered.

This paper is incomplete with many blanks due to a group of students that are partially uninterested and confused as far as the subject teaching aids are concerned, and students by themselves who are not interested.

Statement of the Problem

The problem arising in Westfield and presented in this paper is the problem of how the new supervisor of teaching aids can carry out a teaching aids program in all the public schools of Westfield that will result in the greatest amount of education with the personnel and facilities that are available.

The problem cannot be answered simply by referring to the literature because the plans described will not take into consideration the limitations in Westfield personnel and facilities. Considering the small and irregular use of teaching aids in the schools throughout the state and country, it would seem that plans with existing materials and teachers were required. The same National Education Association Research Bulletin already quoted points out,^{1/} "...how general the dissatisfaction is with the extent and quality of present programs...."

The immediate plan in Westfield is based on the consideration that all pupils should get some benefit from teaching aids immediately without waiting for improved facilities and trained personnel.

Delimitation of the Problem

There are many ways of using teaching aids to enrich the curriculum. The best method for every situation has not yet been devised.

This paper is concerned with using teaching aids in a group of schools that are poorly constructed and equipped as far as the use of teaching aids is concerned, and staffed by teachers who are not trained

1/ Op. cit., p.145.

in the techniques of using them. It is concerned with starting a program immediately with many limitations. It will be superseded by a better program as the limitations noted are overcome.

Some elementary teachers in the middle school may have some knowledge of the child's problem and abilities. If this is so, it would be well to consult the 1958 publication *Teach Your Child*.

In our elementary schools of teaching, education and guidance under the general direction of the Superintendent, Cheyenne, Wyoming, and the Director of Curriculum Studies, Mrs. John C. Johnson, there are various publications, English, Social Studies, Art, Music, Physical Education, Kindergarten and Safety, which are prepared by a separate committee that has performed excellent work.

Any teacher can derive great pleasure and satisfaction in teaching children. These fine objectives are limited and the major and minor areas of responsibility cannot be overemphasized. Unfortunately the members of Central High did not wish to receive the six courses of study until the new State Course of Study was published. This necessitated use of the old course studies course of study.

In our following pages you will find suggestions on what your basic course of study should contain and appropriate teaching aids are mentioned. The primary job of the teaching aids supervisor is to help teachers know what materials they are required to teach, how they are to be utilized in the course of study, daily objectives or units readily indicated and listed. Objectives omitted.

CHAPTER II

IMPROVEMENT OF THE WESTFIELD COURSE OF STUDY FOR GRADES I-VI WITH TEACHING AIDS

Description of Existing Course of Study for Grades I-VI

Every elementary teacher in the public schools has a copy of the course of study for all grades and subjects. It was revised and expanded in 1946 and has 150 mimeographed pages bound together.

It was prepared by committees of teachers, supervisors and principals under the general direction of the Superintendent, Chester D. Stiles, and the Director of Curricular Revision, Edward H. Nims.

There are sections on Arithmetic, English, Social Studies, Art, Music, Special Class, Kindergarten and Safety. Each was prepared by a separate committee that was particularly interested in the field.

Most sections are divided into grades and subdivided into months or teaching units. Specific objectives are listed and the ways and means of achieving them noted or described. Unfortunately the committee on Social Studies did not wish to revise the old course of study until the new State Course of Study was published. This necessitated use of the old social studies course of study.

In the following pages specific objectives or units from this course of study are listed and appropriate teaching aids are indicated. The primary job of the teaching aids supervisor is to help teachers teach better the things they are required to teach anyway as outlined in the course of study. Only objectives or units readily implemented are listed. Others are omitted.

List of Objectives in the Course of Study for Arithmetic That May be
Implemented with Teaching Aids.

1. To secure a knowledge of number facts through familiar experiences instead of through formal drill.

Most of the films used have various numbers of things shown which can be recalled and used to implement this objective.

How many goats were there? How many houses?

2. To appreciate the social values of arithmetic and an eagerness to learn more.

A film "The Food Store"^{1/} shows the necessity for arithmetic and makes the children eager to learn more so that they may do a successful job of shopping.

3. To gain ideas of time.

Many films show the passage of time and should be helpful here. The film "Animals on the Farm"^{2/} starts with an alarm clock. "Colonial Children"^{3/} describes life 300 years ago.

4. To acquire ideas of measurement.

Various objects in the films are long, short, high, tall, thick, small, etc. These may be expressed in inches, feet, etc.

5. To acquire ideas of form.

Objects that are described as square, circular, oblong, etc. appear in many films.

1/ Encyclopaedia Britannica Films Incorporated.

2/ Ibid.

3/ Ibid.

List of Objectives in the Course of Study for English That May be
Implemented with Teaching Aids.

1. To emphasize informal oral expression.

There is no more spontaneous outcome to seeing a film than informally telling what has been seen and relating it to previous experiences. All the teachers who see films remark on the amount of pupil discussion that results when they see a film that is appropriate to their level. Experience in Westfield has shown that this is one of the great values of films in the elementary schools.

2. To develop a desire to listen attentively to a speaker.

Since most films used are sound films the children must listen attentively in order to understand what the film is about. Visitors often say that it's more interesting to watch the small children seeing their films than to watch the film itself.

3. To regard all schoolroom activities as opportunities for language development.

Pupils must develop in their ability to use language. Films can help greatly by letting the child retell the story in his own words. He will certainly use some of the words and expressions in the film. He might tell a story suggested by a picture. He might select the most interesting incident in the film story and tell why he liked it.

4. To develop a desire to talk and write interestingly, correctly, and effectively.

It is a common occurrence after a film is shown to have every pupil want to talk about it. With this stimulus the teacher can insist on interesting, correct, and effective speech. They also have a model in the film narrative since modern teaching films have carefully prepared narration.

5. To provide opportunity for creative work.

Many films show things that pupils are interested in and want to make for themselves. The film gives a wide variety of ideas that may start pupils on creative work that can be guided by the teacher.

List of Objectives in the Course of Study for Social Studies That
May be Implemented with Teaching Aids.

1. To arouse an interest in and an understanding of the work of the people of the community.
 - a. The store. A film "The Food Store"1/ can be used to show children the many things that go on in a store. Skills necessary to carry out a successful shopping trip are shown. Children understand that they must learn to read, write, count, and measure before going to the store with a shopping list. In many cases these teaching aids are only poor substitutes for the real thing which may be very difficult to get into the school program, but a better substitute than most teachers have had until now.
 - b. Gardening. Each spring a series of films from the local extension service dealing with gardening can be used. Children see the importance of what to plant and how to plant. In the fall they see films about harvesting and preserving crops.
 - c. Transportation. The films "An Airplane Trip"2/, "A Boat Trip"3/, "The Passenger Train"4/ and many

1/ Encyclopaedia Britannica Films Incorporated.

2/ Ibid.

3/ Ibid.

4/ Ibid.

others can be used to show children the importance of transportation and many of the details involved.

- d. Police. The films "The Policeman"1/ and "Man on Horseback"2/ implement this study by showing the many duties and responsibilities of these community workers. Some children go home and imitate the policeman they have seen.
- e. Fireman. The film "The Fireman"3/ fits in here to show the children how another community worker does his job. The children see a fire discovered and the alarm sounded in a dramatic manner. Then the firemen demonstrate their well learned skills which save a building. There is now a fire alarm box on loan to the Westfield schools so that all children can have the experience of turning in an alarm without doing any harm.
- f. Farm. There are a number of films about farms that can be used. "Animals on the Farm"4/, "Goats"5/, "The Corn Farmer"6/, and "The Wheat Farmer"7/ are good examples.

1/ Encyclopaedia Britannica Films Incorporated

2/ General Motors

3/ Encyclopaedia Britannica Films Incorporated

4/ Ibid.

5/ Ibid.

6/ Ibid.

7/ Ibid.

Farm life is commonly studied in the lower grades.

Obviously a trip to a farm would be the best experience, but is so difficult to arrange that the Westfield schools do not have them.

- g. Public works. The Westfield Public Works Department has produced a silent film on its work and with a narrative that is very helpful. The color film "Clean Waters"^{1/} arouses children to the poor sewage situation in Westfield.
- h. Health Work. Films about Louis Pasteur, Edward Jenner, and others fit in here.

2. To understand pets and animals.

Habits of Animals. The films "Bruins Make Mischief"^{2/}, "Animals on the Farm"^{3/}, and "The Snapping Turtle"^{4/} help children to understand animals in a delightful way. It is a favorite subject for small children. "Care of Pets"^{5/} is helpful in showing the children how to take care of their own animals.

3. To understand child life in other lands. The series of films

^{1/} General Electric Company.

^{2/} Castle Films.

^{3/} Encyclopaedia Britannica Films Incorporated.

^{4/} Ibid.

^{5/} Ibid.

keeping small and no balance of water at still much
more flood than any oil below which is of great a quantity
of broken materials, with sandstone of which will be at first

small sand sea ab

and dimensions when taken will be fitted up to follow which
evidently a date time from which it will justify a formation
of sandstone made with which will be fitted greyish white
and reddish yellow rock and of pebbles remains

1513

Chipped limestone containing some thin shales which are difficult to
separate from the sandstone and in which are found many
inclusions but also banding of
yellowish ochreous color and in which are found
yellowish purple and brownish ochreous and no limestone
can distinguish a red yellowish band which is made
of sandstone containing fine red ochreous material and
which is made of red ochreous and yellowish red limestone of which
evidently may be made to which
which is made of sandstone and which is made of sandstone of

yellowish ochreous limestone

yellowish ochreous

yellowish ochreous limestone

yellow

yellow

"Children of Switzerland"1/, "Children of Holland"2/, "Eskimo Children"3/, "Navajo Children"4/, "French Canadian Children"5/ and "Children of Japan"6/ are excellent to implement the objectives listed below.

- a. To learn how children of other lands live.
 - b. To compare their lives with the lives of children of their own country.
 - c. To compare highlands, lowlands, hotlands and coldlands.
 - d. The effect of climate on the lives of children the world over.
4. To understand the work and workers of the world in relation to climate and topography. Many of the "Children" films mentioned above are very helpful here. So are the regional geography films such as "The Northwestern States"7/. The film "Here is China"8/ made children wonder why people should work so hard, suffer so much, and have so little. Some of the "March of Time" films such as "The Pacific Coast" are also helpful. The specific objectives are listed on the following page.

1/ Encyclopaedia Britannica Films Incorporated.

2/ Ibid.

3/ Ibid.

4/ Ibid.

5/ Ibid.

6/ Ibid.

7/ Ibid.

8/ Office of War Information.

- a. The earth as a whole.
- b. Regions in the temperate climate.
- c. The cold climate belts.
- d. Hot wet and hot dry regions of the world.
- e. Regions of great elevation.

5. To understand the discovery and exploration of a new world.

- a. The discovery and exploration of the new world.

The film "Discovery and Exploration"1/ can be used for this topic.

- b. The settlement of the new world. "Early Settlers of New England"2/, "A Planter of Colonial Virginia"3/, and other films are used to aid here. A vivid and accurate portrayal of life in historical times can be reproduced for school use. Children can see how people once dressed, lived, worked, and played. Some children go home and want to eat hasty pudding from a trencher.
- c. The development of our nation. The films "Kentucky Pioneers"4/, "Flatboatmen of the Frontier"5/, and "Pioneers of the Plains"6/ fit in very well here to show how the country grew.

1/ Encyclopaedia Britannica Films Incorporated.

2/ Ibid.

3/ Ibid.

4/ Ibid.

5/ Ibid.

6/ Ibid.

d. Our natural resources. There are many films that will show the value of our forests, soil, rivers and mountains. These values are often incidental parts of films designed for other purposes. There is much available on conservation too. In fact the city owns a film titled "Conservation of Natural Resources"1/.

List of Objectives in the Course of Study for Art that May be Implemented with Teaching Aids.

1. To enjoy beauty wherever found.

There are many colored 2x2 slides now available for schools. Having a clear colored picture large enough to be seen by a whole class should be helpful. Some pictures used like "Clean Water"2/ have beautiful scenes that could be used by the art teacher in her regular work.

2. To develop individual expressions in art.

Ideas for art work can be found anywhere. Some of the films should enlarge the pupil's horizons and give him ideas for individual expression that otherwise he would not have. A soap company has a film on carving soap. Harvard University has a series in etching, metal working, etc.

1/ Encyclopaedia Britannica Films Incorporated.

2/ General Electric Company.

List of Objectives in the Course of Study for Music That May
be Implemented with Teaching Aids.

1. Ear training.

The main help to the music supervisor here would be providing good equipment for reproducing good recordings and transcriptions. Many schools are still using old orthophonic reproducers which were removed from homes many years ago. Children should listen to music in schools that is as good as the best in homes. All non-electric phonographs should be discarded immediately. Music for appreciation should be good enough so that it can be appreciated. Comparing instruments and variations should be delightful and easy. Possibly a good recording system would be useful to let children hear how they actually sound.

2. Class instruction in instrumental music and the introduction of orchestral instruments to all.

The Encyclopaedia Britannica series of sound films on musical instruments would be very helpful here to introduce the various instruments and show how they fit into groups. The details of use must be worked out with music teachers.

Special Class

In some of the schools there are "special classes" for the mentally retarded children. Certainly they should have many teaching aids to help in doing the many things done in the other classes but at an

individual rate and level. Considerable work for the future is indicated here. It is a fruitful field that has not been fully developed.

Kindergarten

The kindergarten is another field that is full of possibilities for the use of teaching aids. As soon as equipment and trained teachers are ready there will be wide use of excellent materials.

Safety

Safety education should be implemented by the use of the many good films on safety that are available to schools.

General Motors Corporation has produced a number of them that are used in the schools. "Man on Horseback" and "Safety Patrol" are particularly good for elementary use.

CHAPTER III

IDEAL USE OF TEACHING AIDS IN THE ELEMENTARY SCHOOL

Importance of Ideal Use

Before building a new school building the obvious thing to do is to find out what constitutes the best school building. It would be found that the best school building had many desirable features that would make everyone want to have it. However it would soon be evident that construction was too expensive for ordinary communities to justify the cost. It would also be evident that many of the desirable features would be worthless or nullified by untrained teachers and supervisors.

A similar situation exists between the ideal use of teaching aids and the best use for the Westfield Elementary Schools at this time. The ideal is presented here to indicate the goal and give a basis for comparison during the development.

Teacher Preparation for Individual Use of Teaching Aids

The ideal use of teaching aids would be realized when individual teachers used the aids in their classrooms at the time when they were most useful to implement the learning process. This simple statement tells the ideal answer to the who, where, and when of teaching aids. Who should use the teaching aids? The individual teacher should use them. Where should the teaching aids be used? They should be used in the regular classrooms where other phases of the learning process are pursued. When should teaching aids be used? They should be used

at the exact time when the aid will help the teacher to teach better the thing that she wants to teach anyway. These are the simple answers that make the ideal method, but many years will elapse before ordinary school systems practice the ideal method because of poor support, poor personnel, and inertia.

The teacher in the individual classroom should be the one to use the teaching aids equipment. "The day-by-day school activities are in the classroom. Motion pictures will take their place as basic teaching materials when they are used in the classroom."^{1/} The individual teacher must possess the skill necessary to set up and operate teaching aids equipment, and the training needed for good selection and use of the teaching aid.

The skill necessary to do the mechanics associated with good projection can be obtained only by practice on the machines that will be used. The skill will be developed easily in some mechanically minded and robust teachers and be very difficult for many motor-morons and physically weak or older women teachers.

Someday the machines will be simpler and lighter. "In order that films may be used in the classroom, the projectors must be portable in fact as well as in name. It is necessary to define portability, not by an engineer's standards, but in terms of what the ordinary teacher or the ordinary student can carry without

^{1/} Charles F. Hoban, Jr., *Movies That Teach*. The Dryden Press, New York, 1946, p. 137.

strain, discomfort, or undue effort."1/ Today there is no alternative but to work with the machines that are available.

All classroom teachers should preferably have a course which includes the operation of teaching aids equipment so that they can either do the actual setting up and projection work or supervise the pupils who do it. Such a course, (E. Vis. 112) "Preparation and Projection of Teaching Aids", is currently offered at Boston University.

A teacher's College in the middle West lists the following skills to be acquired by student teachers before they go out to teach.2/

1. Preparing, mounting, indexing, and storing certain types of audio-visual materials.
2. Operating all types of still picture projectors, opaque, 2x2, standard slides, filmstrip, and micro.
3. Operating motion picture projectors, both silent and sound.
4. Preparing the classroom, and selecting the correct type and form of screen for best projection in the given room.
5. Placing the projector and screen so that all observers will be in the correct viewing angle.
6. Operating recording and playback machines, disc, metal tape, or wire.
7. Recognizing and compensating for ear defects when taking audio-aids.
8. Making handmade slides.
9. Making micro slides.

1/ Charles F. Hoban, Jr., op. cit., p. 137.

2/ The Western Illinois State Teachers College Bulletin, Macomb, Illinois, Volume XXVI, Number 4, pp. 36-37.

10. Using the camera in making slides, either black and white, or color.
11. Using guides to locate a desired aid and the source from which it may be obtained.
12. Acquiring techniques and procedures for proper utilization of all aids.
13. Preparing forms for the administration of an audio-visual center.
14. Preparing and using simple correlation forms.

For teachers in service who cannot or will not attend regular college sessions there must be an "In-Service Training Program" given by the supervisor or some authority that is available. The bulletin quoted above states in this connection.^{1/}

"If this program is to be a success, it must have the approval and support of the administration. It is a program that must reach every faculty member, and not just those that are interested. On the other hand, the course must be well planned in order that the instructors will feel that their time is well spent."

The training that teachers need to have for good selection and use of teaching aids is equally important with the skills. The same bulletin^{2/} has a list of objectives for such a course in a teacher's college. "Teacher" can be substituted for "student" in this list.

1/ Ibid., p. 35.

2/ Ibid., p. 36.

1. To acquaint the students with the basic philosophy underlying the successful utilization of perceptual aids.
2. To acquaint the student with the different types of perceptual aids, and the advantages and limitations of each.
3. To familiarize the student with the numerous aids available, and the sources from which they may be obtained.
4. To assist the student in developing and using criteria for evaluating these materials.
5. To help the student devise tests for measuring the educational contributions of the instruction materials used.
6. To acquaint the students with facts to be observed in establishing and administering an audio-visual center.
7. To make known to the students the duties of the audio-visual director in the public school and his relationship to all other faculty members.
8. To develop an understanding and an appreciation of audio-visual aids, and their place in the educational program.
9. To familiarize the students with the techniques and procedures to be observed when utilizing these materials.
10. To assist the students in developing systematic and economical plans for establishing an audio-visual program in a given situation.

Obviously a second best source of teaching aids theory is an in-service training program with the same objectives.

Teachers that are thoroughly trained will make use of an accepted procedure such as that indicated in the book, "Motion Pictures in Education."^{1/}

1/ Op. cit., p. 114.

1. Preview before using.
2. Present as definite tie-in with work under consideration.
3. Some comment by teacher and/or pupils during a showing (silent films or slides).
4. Some form of follow-up.
5. Repetition of the film desirable only to clarify misconceptions.
6. Material in the film summarized, or reviewed in the light of the entire unit being studied.

Library of Teaching Aids

The ideal use of teaching aids in a group of elementary schools requires a central library of films, filmstrips, slides, and transcriptions. Whether to buy or rent a teaching aid is a question that has not yet been completely answered. Apparently some must always be rented or borrowed and some should be owned.

Filmstrips should be owned for two reasons. They are so inexpensive to buy, and there are only a few places from which they can be rented or borrowed when they are needed.

Transcriptions should be owned if they are going to be used regularly, but borrowed or rented if they will be used only once. Little use has been given the transcriptions that are owned in Westfield. Apparently the strictly auditory aid does not appeal strongly to teachers.

The central library might own a few 2x2 or standard lantern slides but these should generally be teacher or pupil produced and kept right in the classroom.

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The ordinary black and white sound film for teaching purposes costs forty-five dollars per reel. The rental is about three dollars per week and the transportation another dollar. If it were used only one week per year for its expected life of ten years the cost to the city would be forty dollars. For an additional five dollars over the ten year period the schools could have unlimited use of the film and at the time when it would do the most good. Furthermore, with reasonable care the prints would be in far better condition for use than the library prints that are used by everyone and soon in poor condition. From this it would seem that a single reel black and white film that will be used by more than one class each year should be owned by the school system.

Dale puts it this way:^{1/} "You must first decide whether or not instructional films should be purchased or rented from a state or regional library. Ownership has many educational advantages. The problem is primarily one of finance. Here a certain amount of arithmetic will help to give the answer. It will probably cost about \$1.50 for a day's rental of an instructional film - \$1.00 for the film and 50¢ for express charges. If the film costs \$30 (and it may cost more or less), 20 rentals will pay for the film. These 20 rentals will cost as much as the film itself. Certainly, then, the school can advantageously begin to buy those films which may be used as often as five, six, or ten times a year. Films rarely used can be rented."

Color films are gradually entering the educational field and where color is an essential part of the story to be learned, it is of course

^{1/} Edgar Dale, Op. cit., pp. 475-476.

essential. For the biological subject "protective coloration" and the general science subject of color itself a color film is most desirable. "Realm of the Wild"^{1/} can be used for the first and "Curves of Color"^{2/} for the second subject with good results. However color film costs twice as much and is half as durable as black and white film. It is also harder to splice and harder to adjust for good sound. The rooms must also be darker. Westfield will probably not own any color films for some years unless these disadvantages are overcome.

The teaching aids library must have all the less expensive teaching aids that are frequently used filed conveniently and safely so that they can be readily used over a long period of time. Probably the Dewey-decimal system as used in the H. W. Wilson catalogue would be the best idea.

The library must have a projection room so that teachers may come to preview, experiment with, or study any of the aids they might want to use. There should also be available the latest books, bulletins, and devices in the field.

The library needs part or full time clerical help to keep account of the many pieces of apparatus, owned films, rented films, requests, and countless other clerical duties that go with a thriving office, library, and teacher's workshop.

1/ United States Department of Agriculture.

2/ General Electric Company.

Classroom Requirements for Teaching Aids

For the ideal use of teaching aids, the classroom must be used. To use the classroom effectively certain numerous conditions must be provided so that the pupils can see and hear easily and clearly. A picture not seen or a sound not heard can make no desirable change in the pupil.

The first requirement for projection is a dark room, or rather a room that can be readily darkened. Much work has been done on screens and projectors to make pictures bright enough to compete with all the light through the usual shades which were designed only to reduce glare. It may be possible for some of the pupils in the best location to see some of the picture but the results are so far from ideal that many teachers understandably refuse the aid.

In each school every room should be equipped with devices for totally darkening the room even on bright days. It should be possible to have one device serve both purposes but no examples are in common use.

The usual solution is a translucent light colored shade for eliminating glare and also a dark curtain running in some sort of light trap along the edges. The light trap may be hinged for ease of operation. The curtains should be purchased with an extra yard of material on the rolls so that they will never be pulled off and so that a new bottom or top can be made without difficulty when wear and tear occurs.

Another solution is the use of drapes that run on a track along the entire side where the windows are. If good quality materials are

purchased this arrangement is very satisfactory. Acoustical advantages result and will be mentioned again.

Some schools put up opaque frames at the windows when projection is contemplated but the arrangement is far from ideal.

"Perhaps our new school buildings will include windowless projection rooms, artificially lighted."^{1/}

The ideal classrooms must have acoustical properties such that reproduced sounds can be understood by the entire class.

In order to have the desirable property of good acoustics there must be larger areas of poor sound reflecting material in the room to replace some of the hard floor, hard walls, and hard ceilings of the ordinary classroom. Acoustical tile or wall board can be hitched to the entire ceiling and makes an attractive and effective solution. The same material can be put in panels on the walls. If heavy drapes are used for darkening the room they will also help the sound reproduction. Ordinary window shades help very little acoustically. Another solution is to hang heavy cloth from high on the walls but a cleaning problem is created. In some rooms heavy carpets might be used but obviously not in ordinary classrooms.

Ventilation in an ordinary classroom may be satisfactory until all the shades or darkening devices are used. The ideal classroom must be well ventilated even when dark and this means during warm weather too when open windows would ordinarily be used. In schools that have

^{1/} Edgar Dale, Op. cit., p. 473.

individual motor driven heater ventilators the solution is to have some kind of individual control installed. If it is a central ventilating system then provision must be made for operating it even in warm weather.

There are other requirements for teaching aids that must be met in the ideal classroom. A sound projector or opaque projector often uses 1000 watts and this is a larger amount of power than is used by ordinary appliances so proper size wire and fuses must be installed. An outlet in the back of the room so that projectors can be operated with short cords is very desirable. There should be another outlet in front of the room for equipment used in that position. A convenience but not a requirement is an alternative light switch at the back of the room where the projector will be set up. If extensive note taking will be required a light dimmer is convenient for any desired amount of light.

The ideal classroom has a screen that can be pulled down in front of the room without forethought or difficulty. If the room is wide a flat screen is best, and if it is long a beaded screen is the one to provide. No modern school should have to move a screen from room to room.

A substantial table or two should be available in each classroom for supporting the teaching aids equipment. For projection a high table is necessary in order to get over the heads of the pupils. For recorders and transcription players a low but rigid table is desirable.

A speaker shelf should be installed half way up the front wall beside the screen so that the speaker for the sound projector will be properly located.

Equipment in Each Building

For the ideal use of teaching aids in elementary schools there must be a certain amount of equipment available in each classroom and another amount available for circulation within the building. Teaching aids theory must be backed up with teaching aids equipment and if the equipment is not readily available then little will be done. Hoban says,^{1/} "It is almost an elaboration of the obvious to argue that projectors must be available in sufficient quantities or motion pictures will not be widely used, no matter how brilliantly the films are planned and produced, and no matter how lavishly prints are distributed to and by film libraries. However, this was not obvious in all quarters in the early days of the Army training program, nor has it been evidently obvious to schools, colleges, churches, industrial organizations, labor unions, community associations, libraries, and other educational groups."

The equipment must be in first class operating condition. This may require the services of a competent repair man who may or may not be an employee of the school system. Large systems could use a full time man but smaller systems would do better to have a regular repair man do their work.

Hoban says in this connection,^{2/} "Another part of the maintenance picture that must be developed is the supply of repair parts to school

^{1/} Charles F. Hoban, Jr., Op. cit., pp. 53-54.

^{2/} Ibid., p. 130.

districts or universities operating their own projector repair shops, and the establishment of projector repair shops throughout the country to perform both major and minor repairs for all their customers. A system of projector maintenance will have reached some reasonable degree of essential service when either the film library which supplies the projectors to the schools, or the vendor who sells projectors to individual schools can not only maintain and repair, or provide for the repair of these projectors, but can also replace the projector during the time it is undergoing repair. In this way, the supply of a projector or projectors can be maintained on a level without loss of projector use during repairs."

Equipment in Each Building

There should be a certain amount of equipment available for circulation in each elementary building in order to make use of the usual teaching aids.

- 1 Sound Projector.
- 1 Tri-purpose projector.
- 1 Opaque lantern slide projector.
- 1 Lantern slide production kit.
- 1 Library of filmstrips and 2x2 slides.
- 1 Transcription and record player.
- 1 Auditorium screen.
- 1 Public Address system.

There should also be a certain amount of equipment available in each elementary classroom due to the difficulty in moving it or frequent use.

- 1 Radio
- 1 Screen
- 1 Set of dark curtains
- 1 Speaker shelf
- 1 Projection table
- 1 General purpose table
- 2 Electric power outlets
- 1 Ventilating system

Full Time Supervisor

The ideal use of teaching aids requires a full time supervisor who is not burdened with mechanics of teaching aids but can devote his energies to the kind of things that modern supervisors should do.

"Unless there is professional direction at the top", Hoban says,^{1/} "a film distribution and film library system can easily remain a supply service to a school, rather than become a professional influence in the curriculum." Barr, Burton, and Brueckner,^{2/} have summarized the three main functions of a supervisor as follows:

^{1/} Ibid, p. 115.

^{2/} A. S. Barr, William H. Burton, and Leo J. Brueckner, Supervision. D. Appleton-Century Company, New York, 1938, p. 21.

I. Studying the Teaching-Learning Situation

1. Critically Analyzing the Objectives of Education and of Supervision
2. Surveying the Products of Learning
3. Studying the Antecedents of Satisfactory and of Unsatisfactory Growth and Pupil Achievement
4. Studying the Interests, Capacities, and Work Habits of Pupils
5. Studying the Teacher at Work and Aiding Her to Study Herself
6. Studying the Curriculum in Operation
7. Studying the Materials of Instruction and the Socio-Physical Environment of Learning

II. Improving the Teaching-Learning Situation

1. Improving the Educational Objectives and the Curriculum
2. Improving the Interest, Application, and Work Habits of the Pupils
3. Improving the Teacher and Her Methods
4. Improving the Materials of Instruction and the Socio-Physical Environment of Learning

III. Evaluating the Means, Methods, and Outcomes of Supervision

1. Discovering and Applying the Techniques of Evaluation
2. Evaluating the General Worth of Supervision
3. Evaluating the Results of Given Supervisory Plans
4. Evaluating Factors Limiting Instructional Outcomes
5. Evaluating and Improving the Personnel of Supervision

CHAPTER IV

PROGRESS OF THE WESTFIELD PROGRAM TOWARD THE IDEAL

Ideal Use Not Immediately Practical

The ideal way to use teaching aids is the best way only when ideal conditions prevail. Concentrating on the ideal use in Westfield immediately would result in infrequent use of teaching aids. The great majority of pupils would receive no benefit from the work.

The reasons why the ideal method is not the best method to use immediately are: teacher training in the use of teaching aids is practically non-existent, the teaching aids equipment in all the schools is hardly enough for one school, the classrooms of the city are poorly adapted and not equipped for use of teaching aids, the libraries of permanent teaching aids are small and finances are and probably always will be severely curtailed.

Teacher Training in Teaching Aids as Shown by Records
in the School Department

A file of information about teachers is kept in the superintendent's office. This file has a card devoted to personal and educational history of the individual. Every bit of educational advancement is supposed to be recorded here. At least once a year teachers are invited to add any new information.

Each of the cards in the file was consulted to determine how many teachers had ever taken a course in teaching aids, visual aids, or audio-visual aids since graduation from college or completion of normal

school. The records showed that teachers have been taking very few courses of any kind. Only one elementary teacher has ever taken a course in anything that might be considered as teaching aids.

The writer has discussed the supervisor's responsibility for improving this situation with an "In-Service Training Program" in Chapter III.

Teacher Training in Teaching Aids as Revealed by Personal Contacts with Teachers

It has been possible to obtain some ideas of teacher training in the use of teaching aids by conversation with the teachers.

A common teacher notion is that films are for entertainment. It is also, of course, a pupil notion. If this idea is removed from the teachers, then the pupils will take care of themselves. The writer has been introduced to pupils many times as bringing some entertainment for them. Constant work must be done to correct this. Comedies are never shown on the equipment except perhaps the week before Christmas. Teaching aids work is always referred to as part of education and not entertainment.

A second notion is that teaching aids work is entirely apart from the course of study and hence is optional and not very important. This is corrected by obviously connecting all films and other aids to the course of study. This is explained in Chapter II.

Another notion is that pupils can be satisfactorily punished by not allowing them to attend the teaching aids session. A tour of a building

while the projector was in operation has often disclosed one or two pupils sadly working at their desks. They were being punished for some infraction of the rules by being denied a part of their education. It is flattering in a way to have this method of education used to improve conduct. It would be as logical to deny pupils a spelling or arithmetic lesson.

Some teachers would like to have teaching aids regularly used only at a poor time for teaching like the last period on Friday afternoon.

The teachers generally cooperate completely with the new supervisor and make his work very satisfying. They are gradually learning that teaching aids are to help them do better the things that they have to do anyway.

Equipment Available

It seems as if the department is always looking for more equipment in order to do some job better. Ten years ago there was practically nothing. Today when all the equipment in the Westfield Public Schools is listed together it appears that there is a great deal.

This equipment has come from many sources such as:

1. School Department.
2. Agricultural Department Endowment Fund.
3. Parent Teacher Associations.
4. Student Council and Other Student Organizations in the Schools.
5. Dances and Shows.
6. Sale of Waste Paper.
7. Westfield Academy Fund.
8. Personal Hobby Equipment.

The equipment does a considerable amount of traveling around so the lists following are not static. Old wind-up record players, of

which there are many, are not listed.

Equipment in High School (not including the
Teaching Aids Room and Office)

- 1 Lantern Slide Projector
- 1 Tri-Purpose Projector (S. V. E.)
- 3 Microphones
- 1 Record Player
- 3 Radios
- 4 Public Address Systems
- 1 Fixed Screen (Auditorium)
- 2 Classroom Screens (painted)
- 1 Portable Screen

Equipment in the Intermediate School

- 1 Sound Projector
- 1 Public Address System with 2 Microphones
- 1 Radio
- 1 Record Player
- 1 Silent Projector
- 1 Portable Screen

Equipment in the Ashley School

- 1 Combination Opaque and Lantern Slide Projector
- 1 Central Sound System
- 1 Record Player
- 1 Portable Screen

Equipment in the Moseley School

- 1 Record Player
- 1 Radio
- 1 Public Address System
- 1 Portable Screen

Equipment in the Prospect Hill School

- 1 Portable Screen
- 1 Lantern Slide Projector
- 1 Record Player
- 1 Radio

Equipment in the Abner Gibbs School

- 1 Wall Roller Screen
- 1 Radio and Record Player Combination
- 12 Stereoscopes

Equipment in the Fort Meadow School

- 12 Stereoscopes
- 1 Record Player
- 1 Portable Screen

Equipment in the Franklin Street School

None

Equipment in the Superintendent's Office

- 1 Silent Projector
- 1 Lantern Slide Projector

Equipment Carried in Supervisor's Automobile

- Sound Projector
- Spare Tubes, Projection Bulb, Exciter Lamp,
Photocell, and Belts
- 1 KW Variable Transformer and Voltmeter
- 40' Extension Cord
- 8' Extension Cord
- 400' Reel
- 1600' Reel
- Cleaning and Oiling Equipment

Equipment in the Teaching Aids Room (High School)

- 1 Sound Projector
- 1 Lantern Slide Projector
- 1 Tri Purpose Projector
- 2 Microphones
- 1 Record Player
- 1 Recorder
- 2 Radios
- 2 Public Address Systems
- 1 Transcription Player
- 1 Fixed Screen
- 1 Portable Screen
- 1 Opaque Projector
- 1 Silent Projector

Teaching Aids Office-Workshop Inventory

2 Office desks
2 Work benches
1 Typewriter
2 Telephones (1 outside, 1 inside)
1 Filing cabinet (4 drawers)
1 Film storage cabinet (containing 40 sound films)
19 Drawers for storage of small items
1 Projection table
100 Filmstrips
100 Transcriptions
1 Vise
1 Tool box and tools
2 Complete rewinding systems with splicers (motor driven)
2 Sets of shelves (for equipment)
1 Bookcase
1 Light dimming system
1 Darkroom and equipment
20 Extension cords
15 Spare film reels
1 Set of slide making equipment

Projection Facilities in Classrooms

In the High School there are two or three rooms that could be considered as equipped so that reasonable projection results could be obtained. Even so they are so poor that classes use the special projection room if they possibly can.

None of the elementary schools with an auditorium has a single room that can be darkened.

The elementary schools that do not have an auditorium each have one room that can be darkened.

It is obvious that much time, money, and effort will be consumed before the goal of teaching aids in every classroom is reached. However, progress is under way and will steadily continue.

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Teaching Aids Library Available

The teaching aids library consists of sound films, filmstrips, and transcriptions that are filed in the teaching aids office and distributed wherever they are wanted.

The following sound films are on file: (January 1947)

Name	Source
Alimentary Tract	E. B. F.
Aluminum	O. W. I.
Body Defenses Against Disease	E. B. F.
Bruins Make Mischief	Castle
Circus, The	Castle
City Water Supply	E. B. F.
Colonial Expansion	E. B. F.
Conservation of Resources	E. B. F.
Defending the City's Health	E. B. F.
Development of Communication	E. B. F.
Development of Transportation	E. B. F.
Digestion	E. B. F.
Distributing Heat Energy	E. B. F.
Early Settlers of New England	E. B. F.
Eyes and Their Care	E. B. F.
Farm Animals	E. B. F.
Food Store, The	E. B. F.
Growth of Cities	E. B. F.
Heart and Circulation	E. B. F.
House Fly, The	E. B. F.
Industrial Revolution	E. B. F.
Leaves	E. B. F.
Lightning	General Electric
Mechanisms of Breathing	E. B. F.
Nervous System	E. B. F.
Reconditioning a Mowing Machine	U. S. Office of Education
Snapping Turtle	E. B. F.
Star Spangled Banner	
Teeth, The	E. B. F.
Washington, D. C.	Castle
Wings for the Fledgling	Rix Milk Company
Wrenches	Plumb Tool Company

The following filmstrips are on file:

Name	Source
Seeing the Airport	United Airlines
Story of Billy Dollar	Treasury Department
Behind the Scenes of a Coast to Coast Flight	United Airlines
Use of Filmstrips	S. V. E.
Picturesque France	S. V. E.
Fun to Travel by Train	N. H. R. R.
We Find Out About Freight	N. H. R. R.
Go With Your Red Cross	(includes transcription)
Poland---Land and Products	Polish Government
People of Poland	Polish Government
Poland's Culture and Customs	Polish Government
Poland at War	Polish Government
History of Poland	Polish Government
Westward Migration	Pictorial Events
Our Government	Pictorial Events
Abe Lincoln in Illinois	Pictorial Events
Civil War to Present	McKinley
Revolution to Civil War	McKinley
Territorial Expanse 1825-50	Briggs
Yes, We Can Have Housing	U. S. Housing
Conquest of the Colorado	U. S. D. A.
Early Settlers	S. V. E.
Westward Movement	S. V. E.
Far Western United States	Am. Con.
Panorama of United States	Am. Con.
Pilots Man Your Planes	Coronet
Anchors Aweigh	Coronet
China's Home Front	Coronet
Glass--Miracle From Sand	Coronet
American Counterpoint	Coronet
The Miracle of Moscow	Coronet
A World and Two Wars	Coronet
Panic (No. 2)	Coronet
China Fights Back	Coronet
Through the Periscope	Coronet
The Times Goes to Press	Coronet
Queens Never Die	Coronet
Dedication	Coronet
A Pictorial History of Movies	Coronet
The History of a Face	Coronet
Fabulous Fields (Department Store)	Coronet
Madame Curie	Metropolitan
Robert Koch	Metropolitan
Edward Trudeau	Metropolitan
Louis Pasteur	Metropolitan

Name	Source
Florence Nightingale	Metropolitan
How to Live Long	Metropolitan
Walter Reed	Metropolitan
Plant Propagation	U. S. D. A.
Forest Fires	U. S. D. A.
Farm Fire Losses	U. S. D. A.
Japanese Beetle	U. S. D. A.
Anatomy of Bee	U. S. D. A.
Insects	U. S. D. A.
Decay in Buildings	U. S. D. A.
Food Makes a Difference	U. S. D. A.
Selecting Foods for Nutrition	U. S. D. A.
Termites	U. S. D. A.
Dutch Elm Disease	U. S. D. A.
Nature of Plant Diseases	U. S. D. A.
The Housefly	U. S. D. A.
Development of Insects	U. S. D. A.
Steinmitz	G. E.
Heat	G. E.
All Electric Ship	G. E.
Mechanics	G. E.
History of Floodlighting	G. E.
Vacuum Tubes	G. E.
History of Electric Industry	G. E.
Magnetism	G. E.
Sound	G. E.
Floodlighting	G. E.
Thomas A. Edison	G. E.
Street Lighting	G. E.
Live Longer With Light	G. E.
Light Airplane Goes to War	Aeronca
Electronics	R. C. A.
Glass-Miracle From Sand	Coronet
History of Movies	Coronet
Conquest of the Colorado	U. S. D. A.
Tree Surgery	Voc. Guid. Films Inc.
Unskilled Occupations	Voc. Guid. Films Inc.
Clerical Jobs Occupations	Voc. Guid. Films Inc.
Air Transportation Jobs	United Airlines

The following transcriptions are on file from the Institute of Oral
and Visual Education.

Series III Democracy is Our Way of Life

1. Democracy Is Our Way Of Life.
2. Democracy Can Be Betrayed.
3. The Rights of Citizenship.
4. The Duties of Citizenship.
5. The Party "Regulars" Versus The "Independent."
6. Democracy Advances.
7. The Early Meaning of Democracy.
8. Increasing Complexity Brings Increasing Regulation.
9. The Westward Advance of Democracy.
10. Democracy Begins At Home.
11. Democracy In The Schools.
12. Democracy And Adult Education.
13. Democracy And Health.
14. Religion In A Democracy.
15. Democracy And The Farmer.
16. Democracy In Industry.
17. Toward The Common Good.
18. Property Rights In A Democracy.
19. Women In A Democracy.
20. Democracy And Radio.
21. Democracy And Preparedness.
22. Democracy In War-Time.
23. The Ideal Persists.
24. The Methods Of Democracy.
25. What Price Vigilance?
26. The Victory of Democracy.

Series IV Our Constitution

1. Unfurling Freedom's Standard.
2. The Mayflower Compact.
3. We Declare Our Independence.
4. Articles Of Confederation.
5. From Chaos Toward Unity.
6. The Virginia Plan.
7. Government By The People.
8. Democracy Goes Into Action.
9. The Bill Of Rights.
10. Freedom Of Speech.
11. Freedom Of Assembly.
12. Freedom Of Press.
13. Freedom Of Religion.
14. Life, Liberty, and Property.
15. Democratic Procedures Extended.
16. By The Will Of The People.
17. Guardians Of Our Constitution.
18. Justice Conquers Prejudice.
19. Public Office Is A Public Trust.

20. Government For The People.
21. Law And Order.
22. Elected To Serve.
23. The Monroe Doctrine.
24. Without Due Process Of Law.
25. The Good Ship "Constitution."
26. Defending Our Constitution.

Series V A Better World For Youth

1. Youth Must Be Free.
2. Educating Youth For Democracy.
3. Freedom Of Endeavor.
4. Youth And Freedom Of Religion.
5. Soldiers Of Hate Or Defenders Of Democracy.
6. Youth In The Home.
7. Vocation For Youth.
8. Young Women Play Their Part.
9. Youth In The Armed Forces.
10. Free Political Thinking.
11. Propaganda Vs. Truth.
12. Youth Has Rights--And Responsibilities.
13. Youth Faces The Future.

Series VI America Determines Her Destiny

1. Two Worlds In Conflict.
2. The Fascist International.
3. Hymns Of Hate.
4. Lies For Destruction.
5. The Fine Art Of Sabotage.
6. Poison For The Campus.
7. Freedom Of Thought.
8. Equal Justice For All.
9. The Right To Be Free.
10. Infection From Berlin.
11. Diplomatic Spiderwebs.
12. Pipelines Of Hate.
13. Divide And Conquer.
14. "Hate Thy Neighbor."
15. Hitler's Unpaid Helpers.
16. A Nation Can Be Destroyed.
17. Truth Will Keep Us Free.
18. The 7th Of December.
19. All Battlefronts Are One.
20. This Is Everybody's War.
21. We Have To Win.
22. United We Stand.

23. The People Are On The March.
24. Prelude To Defeat.
25. We Know What We Want.
26. We Will Get What We Want.

Series VII Eternal Vigilance Is The Price Of Liberty

1. Eternal Vigilance Against Tyranny.
2. Eternal Vigilance In The Community.
3. Eternal Vigilance In The Schools.
4. Eternal Vigilance In The Factory.
5. Eternal Vigilance In Business.
6. Eternal Vigilance In The Home.
7. Eternal Vigilance In Religion.
8. Eternal Vigilance In The Courts.
9. Eternal Vigilance In Government.
10. Eternal Vigilance In Organizations.
11. Eternal Vigilance Against Rumors.
12. Eternal Vigilance For New Truths.
13. Eternal Vigilance Among War Veterans.

Series VIII Our Nation's Shrines

1. The Unknown Soldier.
2. Plymouth Rock.
3. St. Paul's Church.
4. Faneuil Hall.
5. Bunker Hill.
6. Independence Hall.
7. Mount Vernon.
8. Jefferson Memorial.
9. Lincoln Memorial.
10. Statue Of Liberty.
11. The White House.
12. The Capitol.
13. The Flag.

Series IX One Nation Indivisible

1. Bombs Away!
2. So They Might Live.
3. Pipeline U. S. A.
4. Danger...Men At Work.
5. You Own Tomorrow.
6. Victory On Main Street.
7. You Know Him Well.
8. Count Five.

9. "Out Of The Depths."
10. The Making Of A Hero.
11. It All Began With A Lie.
12. Liberty Ship.
13. The State Of The Union.

Finances Available

School administrators might well be curious about the cost of this program. There are 2200 pupils in kindergarten through grade 12 but not counting the Trade School, Parochial Schools or Teachers College Training School. The costs for 1946-47 are approximately as follows:

Film Rentals	\$ 200
Express	150
New Films	1000 (Special gift from trust fund)
New Films	250
New Equipment	500
Repairs	50
Total	<u>\$2150</u>

This makes the per pupil cost about \$1.00 which is much higher than the average of 35 cents reported in the National Education Association Research Bulletin.^{1/} The justification is that Westfield is doing more with teaching aids than the average city. The program is also expanding and expansion is always costly.

1/ Op.Cit., p. 159.

CHAPTER V

METHOD USED DURING 1946-1947

Need for Immediate Action

Whenever a new job is created it is natural that everyone ask what the jobholder is going to do. Teaching aids was a new job this fall and the teachers and administrators of the elementary schools wanted to know what was going to be done.

Chapter III describes the method of using teaching aids that would have been used if Westfield had an ideal school situation. Chapter IV explains the conditions in the school system that make the ideal use impossible in Westfield on a city wide basis at this time.

Determination of a Plan That Would Give All Pupils Some
Teaching Aids During 1946-1947

One possible plan would be having one teacher in each building trained in teaching aids and getting her room fixed up as a model that the others might follow as rapidly as they could. This method did not seem to be the best solution for three reasons.

The first was how to choose the room or class or teacher without stirring up criticism over the basis of selection.

The second was the neglect for a majority of the pupils and teachers that should be helped. If there was a way to help them all, rather than just a few, it should be found.

The third reason was that there was not enough equipment to fix even one room in each school without constantly trading equipment between

schools.

Some plan must be worked out that would give every teacher and every pupil some help with teaching aids at regular intervals during this school year. It is only a temporary plan. The long time plan is explained in Chapter III as the ideal plan.

Assembly Method of Teaching Aids

A consideration was given to the school assembly period. It seems to be agreed that the assembly program should be of general school interest and not necessarily a part of any particular class program at a particular time. An assembly program is a common pupil experience that cuts across class boundaries and desirable outcomes may pop up immediately or at any time thereafter.

Wagner says,^{1/} "All assembly programs should grow out of the class or extra classroom work and in turn should motivate and enrich them."

And also,^{2/} "The assembly does more perhaps than any other phase of school life to unify the school. It is the one activity in which the whole group is brought together and does something as a whole."

Fretwell says, ^{3/} "All extra curricular activities should grow out of the curricular work and then lead back into the curricular work. Thus greatly enriching it."

^{1/} M. Channing Wagner, Assembly Programs. A. S. Barnes Company, New York, 1930, p. 117.

^{2/} Ibid., p. 120.

^{3/} Ibid., p. 17.

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An inquiry about grade school assembly programs in Westfield showed that they had about six each year; one at Columbus Day, Thanksgiving, Armistice day, Christmas, Washington's or Lincoln's birthday, and Memorial day.

If an assembly program had so many desirable outcomes, then why have only six during the year? All the elementary principals were asked why there were only six assembly programs during the year. The consensus of opinion was that it is about the number that pupils and teachers can prepare well and still keep a balance between various types of work. Programs from outside were out of the question more than once or twice a year because there is no money to hire professionals. Also very few people from outside can interest a grade school audience or teach them much that is worth while. The grade schools are not opened to commercial programs.

An inquiry about time schedules when an assembly was due was made and showed that a special schedule had been worked out by each principal to use during an assembly week. This was apparently carefully done so that no one objected. It might be possible to provide more assembly programs as common experiences for the pupils and teachers to draw on during their long hours together. A common experience is an experience that the whole class has as a unit. It is convenient because all can work on the same thing and less provision for individual differences need be made. An assembly period could be easily arranged for some part of each school and meet them all every week, except the six mentioned above, on a definite schedule.

The superintendent and elementary school principals were willing to have the system tried, and gave every help needed. Complete frankness and cooperation straightened out the many little difficulties as they arose.

Now a feeling developed that teaching aids might be going backward in Westfield because all emphasis to date has been placed on the right film at the right time with the individual class. Apparently in the elementary schools here it was a temporary substitute for the ideal or practically no use at all. Westfield is now using a makeshift plan but working toward the best plan.

It should be emphasized here that this is not providing something apart from school work as many schools do with movie programs in the auditorium for recess, lunch time, or after school. The idea is to have a program that is an integral part of the weekly school program in the first six grades.

Justification of the Assembly Method

The assembly method of using films has been tried many times and tested very little, but generally frowned on by leading educators.

Teaching aids for assembly programs have been exploited a great deal because it is the easiest and cheapest way to use them. A group of schools arrange to ship films from one to the other as fast as they can and use them for assembly programs when they arrive. There is no preparation, introduction, or follow-up. There probably is some value gained from the films, but there could be much more.

It has occurred to many educators that much time, effort, and expense could be saved if teaching could be carried on with large groups such as those that arrive in the assembly hall. Teaching in the assembly hall means much more than having the usual assembly in the hall. Teaching in the assembly hall would require the usual introduction, presentation, and testing which is not done in connection with ordinary assembly programs.

Abraham Krasker^{1/} carried out an experiment, reported in 1940, to determine whether the assembly hall with a large group was a good place to teach with films compared with the classroom.

He found the reasons for using films in the assembly hall to be:

1. The projector does not have to be moved from class to class.
2. It is cheaper to darken the auditorium than many classrooms.
3. It is less expensive to hire a film for one showing than for several days.
4. There is less wear and tear on the projector and film.
5. It is an opportunity to use the auditorium which lies idle during much school time.

Because this was such a common practice he assumed the problem of testing the value of the use of educational films with large class groups in the auditorium as compared with the use of the same films in the same manner with ordinary size classes in the classroom.

^{1/} Abraham Krasker, A Critical Analysis of the Use of Educational Motion Pictures by Two Methods. Unpublished Doctor's Dissertation, Boston University, 1940.

In each case, auditorium or classroom, he insisted on the following conditions:

1. The pupils understood that they were responsible for the content of the film.
2. The pupils were required to take notes.
3. The pupils were allowed to ask questions.
4. Only a small amount of film was shown at once.
5. The pupils were given the necessary vocabulary to understand the film.
6. The class was allowed to discuss the film content.
7. The pupils were told what to look for.
8. The pupils were held responsible for what they should be expected to get from the film.

It should be pointed out here that this is far from the usual meaning of assembly films where the classes arrive with no knowledge of the film or reason for seeing it. No attempt is made to defend this method of assembly film use.

Krasker equated two groups and then proceeded to determine the relative efficiency of auditorium and classroom use of films.

He found that without a doubt more learning took place with the classroom group than auditorium group. It seems logical that one teacher, one projector, one film, one set of dark curtains and one screen would do a better job with a small group in a small room than with a large group in a large room.

1. Discipline in the auditorium was never as good as in the classroom.
2. Pupil attitude toward work was not as good.
3. There seems to be a carry-over of the theater atmosphere to the school auditorium.
4. It was difficult to keep the pupils from talking to each other.
5. The pupils were not as comfortable as in the classroom.
6. The auditorium is frequently used for entertainment purposes and many prompt a different attitude on the part of students than is usual in the classrooms.

7. The auditorium is not the accepted place of serious learning for pupils.

The conclusion is evident. It is much better to use films with the individual class in the classroom if it is possible to have that choice.

The problem in Westfield, however, was to choose between the auditorium use of teaching aids for all the classes or no use of teaching aids for most of the classes in the Westfield Elementary Schools.

Krasker showed that class use is better than auditorium use. He also showed with his test results that proper regular auditorium use resulted in much learning.

In his use of the film "How Teeth Grow" by the classroom and auditorium method the mean percents made on the final tests were 61.7% and 39%. With the film "The Blood" the scores were 50% and 44%. With the film "Control of Bleeding" the scores were 77% and 73%. With the film "Posture" the scores were 71% and 70%. These are typical results.

In Westfield regular and proper assembly use of teaching aids appears to be the plan under the limitations of existing facilities, personnel, and equipment. It is admittedly a plan to be abandoned as rapidly as possible in favor of the regular and proper classroom use of teaching aids.

It should be added here that all of Krasker's results on auditorium versus classroom use were obtained with silent films. Sound films, which are now used almost exclusively, are better adapted to large group use than silent films because discipline is less of a problem.

The next problem was the setting up of an auditorium procedure and technique that would come as close to ideal conditions as possible.

1. The films should be used with the smallest groups possible consistent with getting them all at least once a week. The ideal plan, of course, is one class. The poorest plan would include the whole school.
2. The films should implement the existing course of study. If worthwhile film subjects are found that are not duplicated in the course of study then the course of study needs changing to include them.
3. The films should be suitable to the grade level where they are used. Fortunately films are better graded all the time and this will soon cease to be a problem for the individual user. Often today some experimenting is necessary to determine if a film received is at the grade level that is wanted.
4. The pupils coming to the auditorium should be prepared for the film or films that they will see. This means that teachers must have the film title and content ahead of time. The supervisor should also do some audience preparation.
5. There should be questions in the pupil's mind that the film will answer. This is part of step #3.

6. The entertainment attitude should be absent. The school auditorium is not the local theatre. One way to do this is never to show anything but educational films with school equipment and personnel. Nothing should be associated with the supervisor or his equipment except education. Many teaching aids enthusiasts try to bolster their finances by running recess, noon hour, and after school entertainments. They may do more harm than good.
7. There should be a discussion following the film in the individual classroom under the direction of the regular teacher. This discussion is usually spontaneous and not a problem.
8. The film should be referred to again and again during the year as things come up that were shown in the film.
9. The film may be repeated after discussion if the discussion shows that it is desirable and the equipment does not have to be moved somewhere else.

In order to make a workable time schedule the elementary schools were divided into two groups. The kindergarten through third grade comprise one group and the fourth through sixth the other. The first group gets a ten minute primary film each week

like "Children of Holland"^{1/} or "Farm Animals"^{2/}. The second group gets twenty or thirty minutes of film program each week. The type of film varies widely so that the course of study will be implemented in many places.

The Intermediate School with seventh and eighth grade also has a separate program lasting about thirty minutes. This plan is already being added to with individual classroom use under the direction of the regular teachers and with the help of trained students.

Each film is introduced, discussed with the children, and questions are asked that can be answered by the film. For the film "Robin Redbreast"^{3/} with grades 1-3, the following questions were asked:

1. Do you know where robins are when there is snow on the ground, and it is very very cold like it is today?
2. Which robin, mother or father, comes north first in the spring?
3. What job do they do together after they have decided where they will spend the summer?
4. What are their nests made of?
5. How many eggs are usually laid?
6. Why do robins sit on their eggs?

^{1/} Encyclopaedia Britannica Films Incorporated.

^{2/} Ibid.

^{3/} Ibid.

7. Do both mother and father robin sit on the eggs?
8. How long before the eggs hatch?
9. What do new born robins look like?
10. How are they fed?
11. What are they fed?
12. How do they learn to fly?
13. How do they learn to get their own food?

The questions should be asked by the individual teachers, and they will as soon as catalogues can be prepared and distributed.

It was a fairly easy matter to get some one place in each school, the auditorium if it had one, fixed up for acceptable projection part of one day each week. All teaching aids men should take a special course in janitor relations. Parent teacher groups often supplied dark curtains. Special class pupils help each week in fixing things up for smooth projection.

There are three sound projectors available. One runs constantly in the high school projection room. One is in the supervisor's auto trunk and travels constantly. The third is located anywhere it is needed, usually in some classroom at the high school or in the intermediate school. Most schools supply their own screens.

The reaction to this program by teachers and pupils was enthusiasm. That the pupils like the idea almost goes without saying. Their only criticism is that they do not have any comedies. It is a rule never to show any comedies on school projectors either in or out of school hours. Nothing but education should be associated

with teaching aids equipment. If they happen to like this kind of education, that is just what is wanted.

Even though it is not ideal to have three or four classes together for teaching aids, the teachers like the program because it provides their pupils with a common experience that all had together. It is a fair substitute for the field trip and has the great advantage that all had the same experience. When John has been to New York the teacher asks John to tell the class about it even though the class may not be studying New York at the moment. The teacher knows that pupils are learning to think and express themselves all the time and it is not too important whether they are using New York or something else for motivation. How much better if all had been to New York! They can have a common experience that will give them something to read about, write about, and talk about, when they get back to their rooms and time and again throughout the year.

After the system was operating smoothly last fall, the grade teachers were given a questionnaire to fill out and return. It asked two major things about each film that they saw. What happened immediately on returning to the classroom? What uses can be made of scenes, processes, people, etc. shown in the film during the rest of the year? Suggestions about the new system were also requested.

It was naturally pleasing to find that spontaneous discussions started in nearly every case. The pupils had so many questions and comments that each teacher was sure that there had been a valuable experience. Special reports, pictures, reading, writing, acting, and

discussion resulted from most of the program. The answers to the second question were amazing. Almost any good school picture is certain to correlate with the course of study in many places. For example one might think that "Children of Switzerland"^{1/} would have very narrow application to the elementary curriculum. However the teachers found that the following things were useful to discuss and refer to during the year:

1. How cheese is made
2. Snow capped mountains in summer
3. Cog railways
4. Sound of foreign language
5. Peculiar dress and custom
6. Lack of modern machines
7. Clock making

Older children recently saw a sponsored film titled "Railroadin"^{2/} which apparently is useful for the following things during the year:

1. Importance of modern transportation
2. History of transportation
3. Standard time zones
4. Early opposition to the railroads
5. Steam versus Diesel versus Electric trains
6. Job opportunities in transportation
7. Weather
8. Geography of parts of our country
9. Signaling systems

The March of Time film "The Pacific Coast" was valuable in showing:

1. Rugged terrain in our pacific states
2. The Oregon Trail
3. Lewis and Clark expedition
4. Spanish influence on our country
5. Shipbuilding
6. Airplane manufacture

1/ Encyclopaedia Britannica Films Incorporated.

2/ General Electric Company.

7. Steel mills
8. Synthetic rubber manufacture
9. Railroad transportation
10. Railroad construction
11. Housing problems
12. Aluminum manufacture
13. Lumbering
14. Plywood manufacture
15. Fish canning
16. Petroleum
17. Water power
18. Irrigation
19. Sugar beet industry
20. Alfalfa growing
21. Apple growing
22. Orange growing
23. Wine industry
24. Movie industry

The pupils in the Westfield Schools are learning more about their world than ever before and in a way that they enjoy. Help is being provided that will make the hours of drill, problem solving, and general education more understandable and enjoyable.

The only suggestion regularly received from the teachers was that they know in advance what the films would be and that they come at a time to correlate with their individual course of study. Starting immediately a bulletin is going regularly to the schools indicating the films to be used. Since most of these are rented the right film will not always come at the scheduled time and be in good condition. If film trouble occurs it will be necessary to substitute a suitable film from the small library of owned films. The second suggestion is more difficult to carry out since different teachers are teaching things in different grades at different times. When only one class uses the aid at a time, as planned for the future, this will not be

a problem.

Filmstrips and silent films instead of sound films have been tried in these assembly programs but results are not as satisfactory. Strips and silent films are good for classroom use by a teacher that wants to use them.

and by 1 and 2 miles to the east of the city, the surface is

composed of the older and more solid rocks of the

older rocks, and of the newer and less solid rocks of the

younger rocks.

CHAPTER VI

PLAN FOR 1947-1948

Need For Progress

Certainly the method put into operation during this year is not the final goal. It is only a beginning. Progress toward the ideal must be started immediately and continued year after year.

There are some specific ways in which the teaching aids program can be improved in the Westfield Schools next year and this chapter will develop them.

Film Schedule to Coincide with Course

of Study

"Strike while the iron is hot" is an old saw that applies to education as well as horseshoeing. If it is possible to use a film in the grade schools at the time when they are working on a problem it is infinitely more valuable than if it comes at a time when they are occupied with another problem.

Chapter II lists the topics, objectives, and units from the course of study that can be implemented with teaching aids. All teachers are expected to use the course of study, but they are not required to follow a rigid time schedule so that all of a certain grade would be engaged in the same activity at the same time. There are undoubtedly advantages and disadvantages to have the same time schedule in effect in all rooms of a single grade, and no attempt is made to evaluate them other than to say that the scheduling

job for films would be much easier. The only thing to do is to let the teachers decide by majority vote when they would like to see the films that will be available. This is a small step toward the ideal.

There are enough primary catalogues from Encyclopaedia Britannica available describing the films to be used so that each primary teacher may have one on her desk. Before next year the teachers will be given an opportunity to indicate on a blank schedule the week that each film will be most valuable. If some are not wanted then blank spaces will show the fact.

Additional blank spaces will be provided for individual teachers to list areas where they need help not supplied by Encyclopaedia Britannica. Then a search for other sources to fill indicated needs can be made.

For the upper grades there is more variation in the classrooms and the subjects taught. Some choice in the selection of films will be given but much progress here will have to await better facilities, equipment, and trained personnel.

Distribution of Schedule and Description of Films to All

Grade Teachers

After the teachers have had an opportunity to specify the dates when they want certain films a tentative master schedule can be arranged that will please the largest number of them.

When this is done the films will be scheduled, for the most part, through a rental library which will send back a confirmation that will

make possible a master schedule for the whole year.

This schedule in combination with the film booklet already mentioned will inform each teacher before the year starts of what is coming, when it is coming, and what is in it. Then any teacher that would like to re-arrange her yearly schedule to conform with the majority, and incidentally the film schedule, may do so.

For the older groups a schedule will be made months in advance with a brief description of the content so that they can take advantage of films scheduled.

By next year the rental services should be more dependable. It hurts the program to prepare a class for a particular film and then not have it due to breakdown of transportation or failure of someone to return the film on time. Films for elementary schools are badly overworked and many of them are in such poor repair that much time is consumed making them ready for use. This situation will soon improve.

Funds should soon be available to purchase a few more elementary films complete with guides to be used more nearly as they should be used.

Use of Smaller Groups

Next year with less new ground to be broken there should be enough time to work with smaller groups in the individual schools. This of course will be working toward the ideal of individual class groups.

Some of the schools with auditoriums have an unused classroom available since enrollments were once much higher than today. Some of these rooms are now libraries, shop rooms, eating rooms, or just store-rooms. They can, with some ingenuity and a little money, be made into satisfactory projection rooms for single class groups. With cooperation it should be possible to do some work with individual teachers.

The prepared rooms can also be used with lantern slides and film-strips which have not been used recently in any of the schools. The parent teacher associations are enjoying a revival in the city and seem disposed toward buying some equipment. Record players and radios could well be located in these rooms.

In schools without assembly halls it will be easy to use the room already provided for teaching aids and simply call in smaller groups.

Use of Simpler Teaching Aids by Individual Teachers

By simpler teaching aids is meant filmstrips, 2x2 slides, radio, and records, or transcriptions.

Teachers like to use sound motion pictures because they do such a complete job all by themselves. However the equipment is the most expensive and the most complicated to run. The sound film is also the most expensive and most easily ruined. With inexperienced teachers and limited finances it would seem wise not to start with this type of aid.

A filmstrip and its projector are relatively cheap, simple and foolproof. There are already a number of them in Westfield and schools can probably own one of their own if they choose. A few minutes of

instruction and the teacher can be left alone with the instruction book, a practice strip, and a list of the strips that are available. Some parts of their course will soon have more illustrations.

2x2 slides are most useful to teachers who own or have access to a small camera that will take color film which will be made up into slides during the developing process. When asked about cameras to buy it is easy to point out the advantages of this aid. Two teachers in the high school have made numerous slides to go with their courses.

Lantern slides in the primary grades should be largely handmade rather than photographic. The writer has a Graflex camera with which he makes photographic slides but the expense and technique will always be beyond many teachers. Some types of hand made slides can be done by the pupils, and there should be a lot of this done next year.

Most schools have a radio. As the price of radios is reduced or good used ones are available each room should have one to be used for educational programs, the time, news, and weather. The supervisor's job will be largely getting the attention of teachers called to worthwhile programs and keeping the radios in good working order.

Most of the schools now have one electric record player and a number of wind-up players, often one in each room. Only electric models should be used. There are many children's records now available and each school should own some. Teaching songs and music should be aided with good records. Transcriptions have great possibilities in schools but are seldom used due to the special equipment required.

If teachers can be trained to use some of these simple aids by themselves with their own groups either in their classrooms or in a central projection room then progress will be made next year. When more sound projectors are available they will be ready to operate them in their own schools.

The school board has been asked to consider the possibility of having a central projection room in the high school. A committee has been appointed to study the matter and report back to the school board. A large amount of money would be required to furnish such a room, however, it would be well worth the expense.

The last point which is a modification of the preceding one is the following: In the first case, whereby adoption of some new plan, it has been recommended that the principal, teacher, and students be given time off from their regular activities to prepare, correlate, and use the new curriculum completely.

This plan could well be used by many other schools because there are many ways of getting teachers and time off the schedule without hindrance, trouble, and trouble. It might be a final solution or a step in the direction of the best according to the total needs of our school system.

The above-described period could be applied to a school when many schools in different towns are visited regularly by the same members and administrators. The only difficulty is the time allotted during which.

The plan makes the teachers feel that they have been given what they feel they need. The principals feel that our visitors at least are fair spectators for the last visit will be much easier.

CHAPTER VII

SUMMARY AND CONCLUSIONS

This paper was designed to show the problem of teaching aids in the Westfield Schools that confronted the writer upon his appointment as supervisor of teaching aids this school year. An ideal solution is indicated by studying what the experts have written. A first year plan is described with emphasis on some teaching aids immediately for all pupils. A second year plan is described to overcome some of the shortcomings of the first plan and look toward the ideal.

The immediate plan is a modification of the assembly plan of using teaching aids. It has the usual assembly situation of large mixed groups. It has the classroom situation of preparation, correlation, and use by the individual teacher.

This plan could well be used by many other school systems faced with the same problem of getting teaching aids into all the schools with limited equipment, funds, and training. It might be a final solution or a step in the direction of the ideal depending on the total resources of the school system.

The plan described herein could be applied to a school union where many schools in different towns are visited regularly by the same supervisors and superintendents. The only difficulty is the added distance between schools.

The plan works. The teachers feel that they have been given some help that they needed. The principals feel that the solution is sound and a fair substitute for the ideal that may be still many years away.

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DISCUSSION

incident. Several new species have been collected from the area, and a number of new records have been made. The following is a brief summary of the work done.

The work was divided into two main parts: faunal and botanical. The faunal work was carried out by Dr. H. G. Smith, who has been working on the fauna of the area for many years. The botanical work was carried out by Dr. J. C. Moore, who has been working on the flora of the area for several years. The results of the work are summarized below.

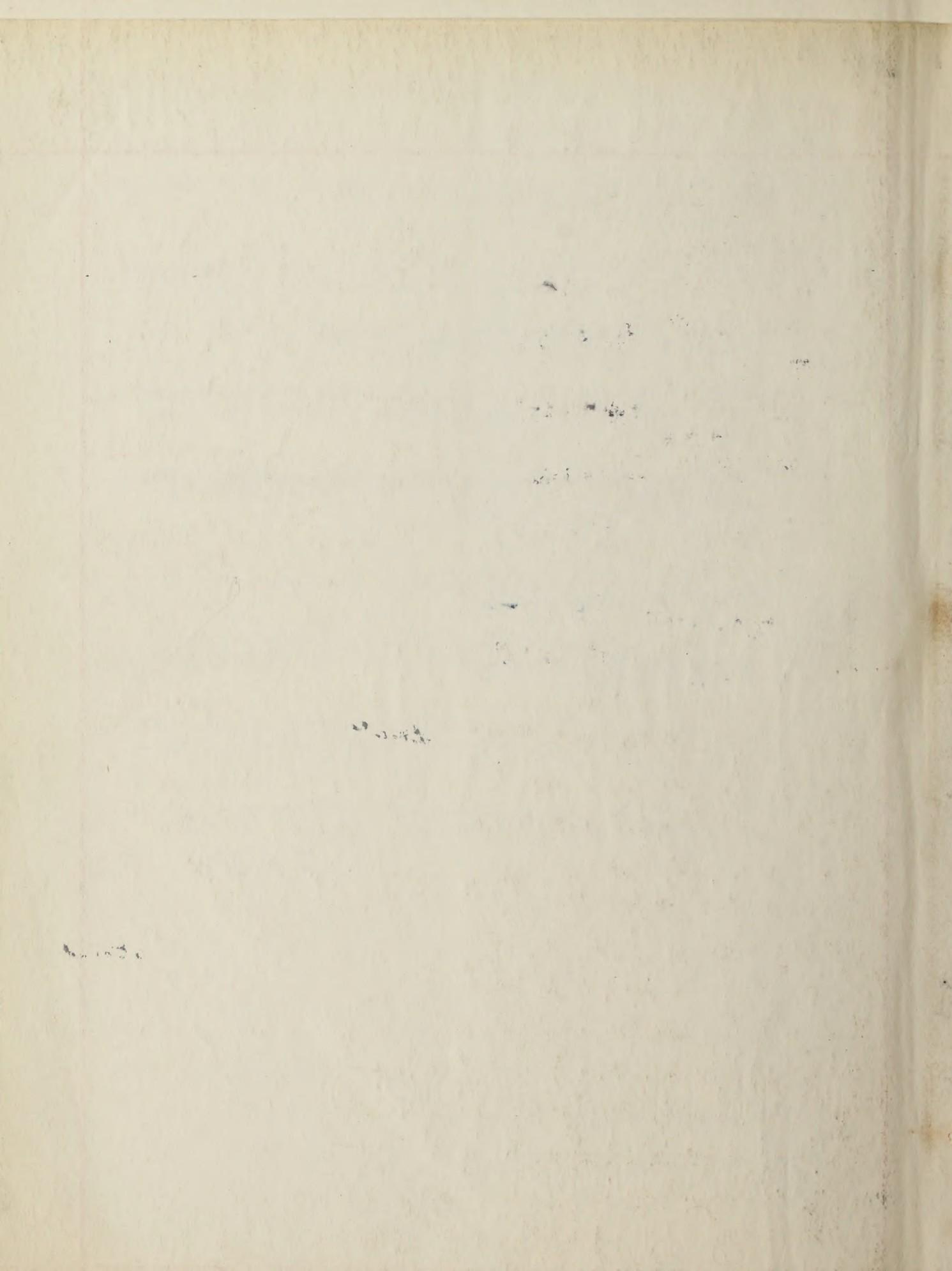
Fauna: A total of 100 species of animals were collected, including 50 mammals, 30 birds, 20 reptiles, 10 fish, and 10 insects. The most abundant group was the mammals, with 50 different species. The most common mammal was the black-tailed jackrabbit, followed by the desert fox and the desert marmot. The most common bird was the desert sparrow, followed by the desert lark and the desert towhee. The most common reptile was the desert iguana, followed by the desert lizard and the desert snake. The most common fish was the desert pupfish, followed by the desert killifish and the desert goby. The most common insect was the desert beetle, followed by the desert fly and the desert ant.

Botany: A total of 150 species of plants were collected, including 80 grasses, 40 shrubs, 20 trees, and 10 vines. The most abundant group was the grasses, with 80 different species. The most common grass was the desert grass, followed by the desert wheat and the desert rye. The most common shrub was the desert sage, followed by the desert buckwheat and the desert buckwheat. The most common tree was the desert mesquite, followed by the desert acacia and the desert ironwood. The most common vine was the desert bindweed, followed by the desert morning glory and the desert bindweed.

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